2006

Boat Ramp Monitor

Report

dcr
Massachusetts

Department of Conservation and Recreation ~ Lakes and Ponds Program

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2006 Boat Ramp Monitoring Program

In response to the increasing spread of invasive non-native aquatic species throughout our water bodies, the Department of Conservation and Recreation (DCR) Lakes and Ponds Program has developed the Boat Ramp Monitor Program.

Non-native or exotic species are plants or animals that are indigenous to other parts of the country or world, and when they are introduced to a new area, they often disrupt the balance of that ecosystem. Many non-native plants reproduce very rapidly, displacing native species and developing mats at the water's surface that render boating, fishing, swimming and other recreational activities impossible or dangerous.

Non-native plants arrived in our region by a variety of ways including accidental escape from the aqua-gardening/aquarium trade, intentional release or by hitching rides from foreign countries in ship ballast water. Once introduced, they are further spread to additional water bodies by hitching rides on boat motors, trailers, fishing gear and in bait buckets. Many non-native plants reproduce vegetatively. This means, that when just one small plant fragment enters a new water body it is often able to grow into a mature plant and potentially infest the entire lake or pond. When a non-native species is established it is very expensive to control and nearly impossible to eradicate. **Prevention is the key!**

Boat ramp monitors were places at both infested and un-infested water bodies state wide, and their goal was to inspect every boat entering or leaving to make sure that no plant fragments were attached the boat, trailer or gear. Boaters were given an informational brochure, asked to participate in a quick, voluntary boat inspection and complete a brief survey.

The program has a three-pronged approach to slowing the spread of invasive species. First, this project helps prevent pristine water bodies from becoming infested; second, it reduces further spread of the exotic plants from infested areas, and finally, the monitors educate boaters about non-native species and the steps they can take to protect our lakes and ponds.

For the summer of 2006, six ramp monitors were hired, and they worked at six main ramps between Memorial Day and Labor Day: Otis Reservoir (Tolland), Lake Cochituate (Wayland), Wallum Lake (Douglas), Congamond Ponds (Southwick), Long Pond (Freetown) and Mashpee-Wakeby (Mashpee). Four of the monitors also rotated between seven additional ramps including Whitehall Reservoir (Hopkinton), Webster Lake (Webster), Lake Quinsigamond (Worcester), Big Pond (Otis), Cheshire Reservoir (Cheshire), Lake Onota (Pittsfield) and Pontoosuc Reservoir (Pittsfield). Seven of the ramps were repeats from 2004 and 2005, and six were new ramps.

2006 Boat Ramp Monitor Locations

Three of the sites were chosen because they currently do not have infestations of invasive, non-native plants, the “Protection” group, and seven lakes were chosen that already have non-native plants, with the goal of preventing their further spread.

Protection

Wallum Lake
Located in the heart of Douglas State Forest, this 322-acre water body has deep clarity and a maximum depth of 78 feet. A 2002 plant survey showed that, with the exception of Purple Loosestrife along the shore, there were no non-native aquatic species present, and plant growth in general was scarce. This boat ramp is heavily used, and due to its proximity to Rhode Island and Connecticut, draws numerous out of state boaters. A second ramp is located in Burrowville, RI.
Note: Although this ramp has been monitored every year since 2004, ramp monitors spent a portion of their time at Whitehall Reservoir and Ashland Reservoir. During 2006 the ramp monitor split his time between Wallum Lake, Whitehall Reservoir and Webster Lake.

Big Pond
Big Pond in Otis MA is fortunate not to have any infestations of non-native aquatic species, despite it high boater use. There are two ramps that provide access to the water body, the Big Pond boat ramp and J & D Marina.
Note: Although this ramp has been monitored each year since 2004, due to the higher use at Otis Reservoir, the ramp monitors spent the majority of their time there.

Otis Reservoir
This large 1200-acre water body located in Tolland State Forest, and since the water body is free of non-native aquatic species, it is considered a priority protection location for the Lakes and Ponds Program. Although the water body is relatively shallow, plant growth is somewhat scarce.
Note: Although this ramp has been monitored each year since 2004, the ramp monitors spent a small portion of their time at nearby Big Pond.

Preventing Further Spread

Lake Cochituate
Sprawled across three towns (Natick, Wayland and Framingham), this 650-acre lake draws over 200,000 visitors annually to Cochituate State Park, many of whom are boaters. Additionally, it is a favorite location for bass tournaments, water skiing competitions and other public events. As of 2002, this water body has had a large infestation of three non-native species, and DCR's main concern is to prevent the spread of these species to other water bodies in the area, and to educate the large number of boaters who frequent the lake.
Note: Although this ramp has been monitored since 2004, during 2006 the monitor spent one third of his time at Lake Quinsigamond.

Congamond Lakes
This 465-acre lake has access via a public ramp and is a popular boating and fishing location for residents from both Massachusetts and Connecticut. The lake is stocked each spring and fall, and trout fishing prevails here. The lake is divided into three basins, and there are ramps located on both the north and south basins. In 2005, Asian Clams (*Corbicula*) were documented, and the lake is also infested with both Eurasian Milfoil *(M. spicatum*) and Curly-leaved Pondweed (*P. crispus*).
Note: This is the first year that this ramp has been monitored. Although the ramp monitor was primarily located at this ramp, he also spent a few days at Pontoosuc Reservoir, Cheshire Reservoir and Lake Onota.

Long Pond
This enormous, shallow 1,721-acre lake is the largest natural water body in Massachusetts. It sprawls across the towns of Lakeville and Freetown, with the public access ramp located in Freetown. This pond is a favorite location for bass tournaments, and the pond has been heavily infested with both Fanwort (*C. caroliniana*) and Variable Milfoil (*M. heterophyllum*). During 2006 a new infestation of Asian Clams (*Corbicula*) was detected. This is the first year that this ramp been monitored, and the ramp monitor dedicated 100% of her efforts here.

Lake Quinsigamond
Lake Quinsigamond is a large, 772-acre urban water body nestled between Shrewsbury and Worcester. Due to is size, location, very developed shoreline, presence of two boat ramps and waterfront restaurants, Quinsigamond draws a very diverse crowd, including recreational motor boats, sail boats, crew teams, jet skis and kayakers. There are several non-native plants in the water body including Variable Milfoil *(M. heterophyllum),* Eurasian Milfoil *(M. spicatum*), and Curly-leaved Pondweed (*P. crispus*). There are three main basins, and the shallow southern basin (often referred to as Flint Pond) has the greatest concentration of aquatic vegetation. The ramp monitors worked mainly to prevent the invasive species in this pond from spreading to other water bodies.
Note: This ramp was has been monitored since 2005, but during 2006 the ramp monitor divided his hours, spending one-third of his time at Quinsigamond and two-thirds of his time at Lake Cochituate.

Webster Lake
Webster Lake is over 1,270 acres and there is public access via two boat ramps. This water body receives very heavy use, especially on the weekends during the summer. Unfortunately, in addition to several species of non-native plants (Fanwort, Variable Milfoil and Eurasian Milfoil) Webster Lake is one of the few water bodies in the state with non-native Asian Clams (*Corbicula*). In an effort to prevent he spread of these clams to additional water bodies, the Webster Lake ramp monitor informed boaters of the clam's presence and emphasized the importance of disposing of bait bucket water, live well water and engine cooling water well away from shore.
Note: This ramp has been monitored since 2005, but during 2006, the ramp monitor divided his time between this ramp, Wallum Lake and Whitehall Reservoir.

Whitehall Reservoir
Located in Whitehall State Park in Hopkinton, MA, this 573-acre water body is a favorite for location for fishermen. It is relatively shallow (average depth is 6 feet) and the speed limit on the water body limits waterskiing and other water sports. Unfortunately, a large infestation of Variable Milfoil (*M. heterophyllum*) threatens the health of the reservoir, and the ramp monitor's goal here was to stop the spread of these species, and to prevent the introduction of any additional non-native species.
Note: Although this ramp has been monitored since 2004, the monitors split their time between this ramp, Ashland Reservoir, Wallum Lake and Webster Lake (2006).

Mashpee-Wakeby Ponds
This 729 –acre water body is comprised of two combined kettle ponds and lies between Mashpee and Sandwich. Public access is provided by a ramp in Mashpee, and since this pond is regularly stocked, it draws anglers year round.
Note: This is the first time that a ramp monitor was posted at this ramp, and he spent 100% of his hours here.

These ramps were monitors for just a few days during the summer.

Pontoosuc Reservoir
This 480-acre lake is heavily used and is choked with several non-native species including Water Chestnut (*T. natans*), European Naiad (*N. minor*), Eurasian Milfoil (*M. spicatum*), and Curly-leaved Pondweed (*P. crispus*).

Cheshire Reservoir
Cheshire Reservoir, a 480-acre lake, has three access points, two of which are suitable for car top boats only. This reservoir has abundant weed growth, and is infested with Curly-leaved Pondweed (*P. crispus*) and Eurasian Milfoil (*M. spicatum*).

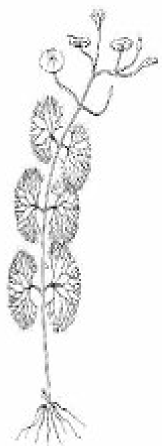
Lake Onota
Lake Onota is a favorite among fisherman, boaters and swimmers alike. This water body is 617 acres, has a maximum depth of 66 feet and an average depth of 22 feet. Non-native species present include Water Chestnut (*T. natans*), European Naiad (*N. minor*), Eurasian Milfoil (*M. spicatum*), and Curly-leaved Pondweed (*P. crispus*).

The acreage, depth and stocking information was provided by Mass Wildlife.
For more information visit Pond Maps Online at: http://www.mass.gov/dfwele/dfw/dfw_pond.htm

Department of Conservation and Recreation
Lakes and Ponds Program
Boat Ramp Monitoring Program 2006

Date ______________
Location ______________

Boater Survey



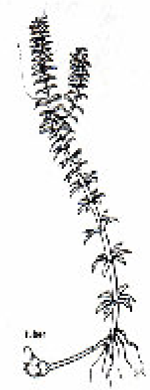
1) What are the last two lakes or ponds that your boat has been in? ______________

2) Prior to today, had you heard of invasive species? YES NO

   If so, which species have you heard about? ______________

3) Prior to today, were you aware that one of the main ways that invasive plants enter a lake or pond is by hitching rides on boat trailers, motors and other gear? YES NO

4) Are you willing to take the time to inspect and/or wash your boat after visiting a lake? YES NO
   If not, why? ______________



Thank you for your time!

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(Please do not write below this line. To be completed by the boat ramp monitor.)

- Did you obtain permission to inspect the boat and trailer? YES NO
- Were any plant fragments or aquatic animals present on the boat? YES NO
- If so, were they non-native? YES NO
- What species did you find? ______________
- Comments:
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Results

Total Number of Surveys Collected

(*The total number of surveys collected at each ramp is listed in Table A*)
During the third season of the DCR Lakes and Ponds Boat Ramp Monitoring program, 2283 surveys were collected from boaters statewide at 13 ramps.

(The responses for each individual ramp are also listed in Table B)
Overall, the greatest number of surveys were collected at Long Pond in Freetown (528 surveys) followed by Congamond Lakes (489 surveys); Otis Reservoir (306); Mashpee-Wakeby Lake (273 surveys); Cochituate (215 surveys); Lake Onota (123) Quinsigamond (76 surveys), Wallum Lake (69 surveys), Pontoosuc Reservoir and Cheshire Reservoir (57 surveys each), Whitehall Reservoir (41 surveys), Webster Lake (40 surveys) and lastly Big Pond (9 surveys). It is important to note that these numbers are not a true reflection of how busy the individual ramps are, since four of the six boat ramp monitors divided their time between two or three ramps, while the other two monitors remained at only one ramp.

Overall

(*The tally of responses to each question is listed in Table A*)
The survey results show that of the 2283 surveys collected:

- 79.3% of boaters were aware of invasive species. (see Graph 1)
  (1768 were aware; 461 were not aware; 54 did not respond)
- The non-native species that people were most familiar with was Milfoil (583), followed by Zebra Mussels (257), Fanwort (22), Water Chestnut (15), Asian Clam (22), Purple Loosestrife (23), Hydrilla (53), Snakehead Fish (40) (see Graph 2)
- 77.6% of the boaters understood that plants are spread by boats. (see Graph 3)
  (1722 were aware; 487 were not aware; 65 did not respond)
- 96.5% of all boaters surveyed were willing to wash their boats. (see Graph 4)
  (2116 were willing; 90 were not willing; 77 did not respond or said maybe.)
- 99.2% of the boaters were willing to participate in the inspection. (see Graph 5)
  (2106 inspected; 18 refused; the remaining 159 boats had already been launched, so an inspection was not possible).

- 10.7% (224) of the 2080 (26 surveys were blank) inspected boats had plant fragments. Some boats were transporting more than one species. There were 237 plant fragments found on 224 boats. (see Graph 6)
- 51% of these fragments were non-native. (see Graph 7)
  (123 were exotic, 89 fragments were native; 25 were unidentifiable)

Table A Total results

Question	yes	no	blank	total
Prior to today, have you heard of AIS?	1768	461	54	2283
Are you aware boats spread AIS?	1722	487	74	2283
Are you willing to wash your boat?	2116	90	77	2283
Permission given to inspect boat and trailer?	2106	18	159	2283
Were any plant fragments present?	224	1856	26	2106
Were the fragments found were non-native?	123	76	25	224

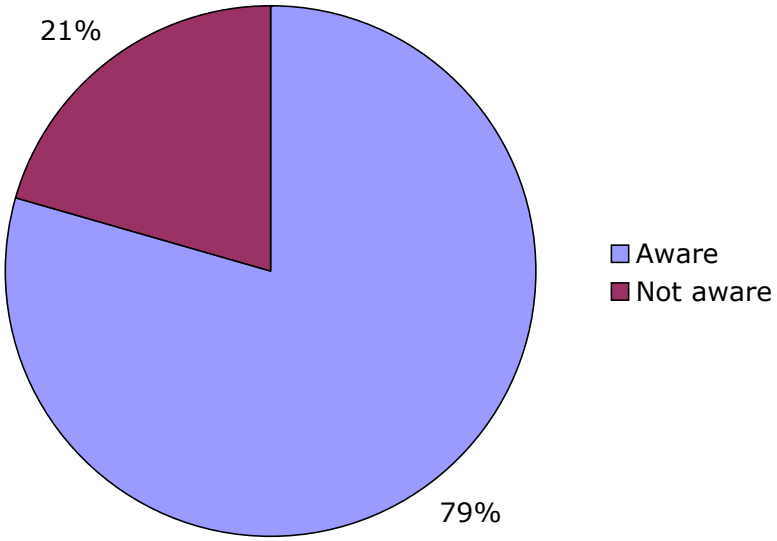
Table B Results by ramp

	Ramp Total	Aware of AIS of state	Not aware	Blank	Aware boats carry AIS	Not aware	Blank	Willing to wash/inspect?	Not willing	Depends Blank
Mashpee	273	251	10	12	259	2	12	250	8	15
Quinsig.	76	50	26	0	40	36	0	76	0	0
Long Pond	528	439	89	0	414	112	2	503	16	9
Cochituate	215	154	61	0	121	94	0	215	0	0
Congamond	489	332	157	0	356	124	9	479	10	0
Otis	306	245	19	42	238	19	49	211	44	51
Big Pond	9	9	0	0	9	0	0	8	1	0
Onota	123	88	35	0	87	36	0	116	7	0
Pontoosuc	57	34	23	0	32	25	0	57	0	0
Cheshire	57	37	20	0	37	20	0	54	1	2
Wallum	69	59	10	0	60	9	0	67	2	0
Webster	40	33	7	0	34	6	0	39	1	0
Whitehall	41	37	4	0	35	4	2	41	0	0
Total	2283	1768	461	54	1722	487	74	2116	90	77

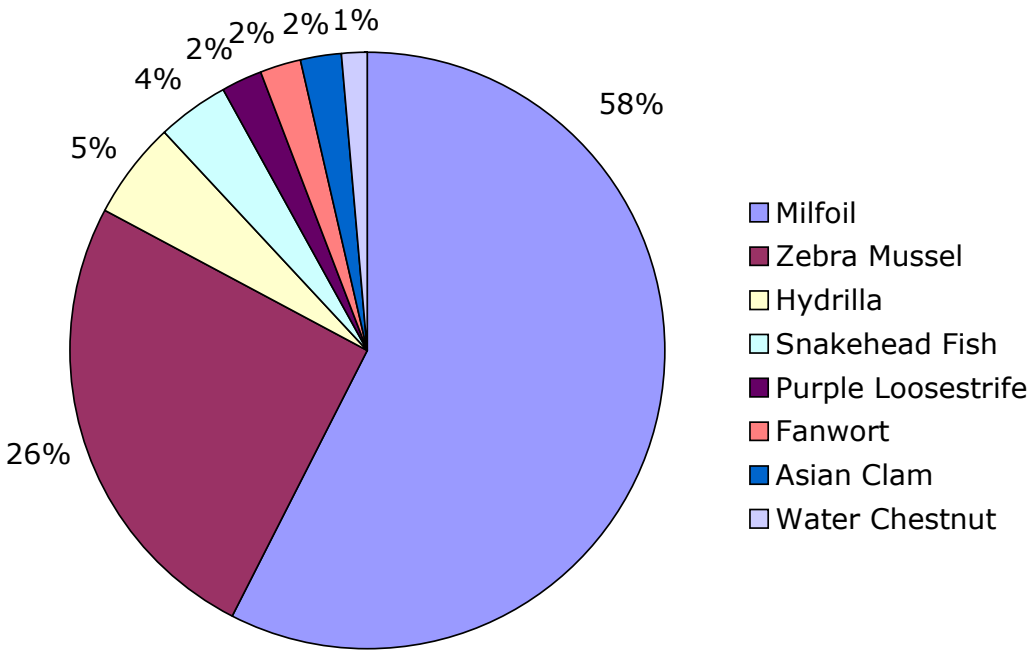
	Ramp Total	# Boats inspected	Declined	In water/ blank	# Boats w / plants	With out plants	Blank	Plants native	Plants exotic	Plants unknown
Mashpee	273	271	0	2	4	267	0	4	0	0
Quinsig.	76	76	0	0	12	62	2	7	5	0
Long Pond	528	505	1	22	44	437	24	35	3	6
Cochituate	215	215	0	0	45	170	0	14	27	4
Congamond	489	394	13	82	31	363	0	4	27	0
Otis	306	297	0	9	35	262	0	6	28	1
Big Pond	9	8	1	0	1	7	0	1	0	0
Onota	123	100	1	22	16	84	0	1	15	0
Pontoosuc	57	49	0	8	7	42	0	0	7	0
Cheshire	57	44	2	11	6	38	0	0	6	0
Wallum	69	68	0	1	5	63	0	2	0	3
Webster	40	38	0	2	5	33	0	0	1	4
Whitehall	41	41	0	0	13	28	*0*	1	4	7
	2283	2106	18	159	224	1856	26	76	123	25

2006 Overall Boater Survey Results

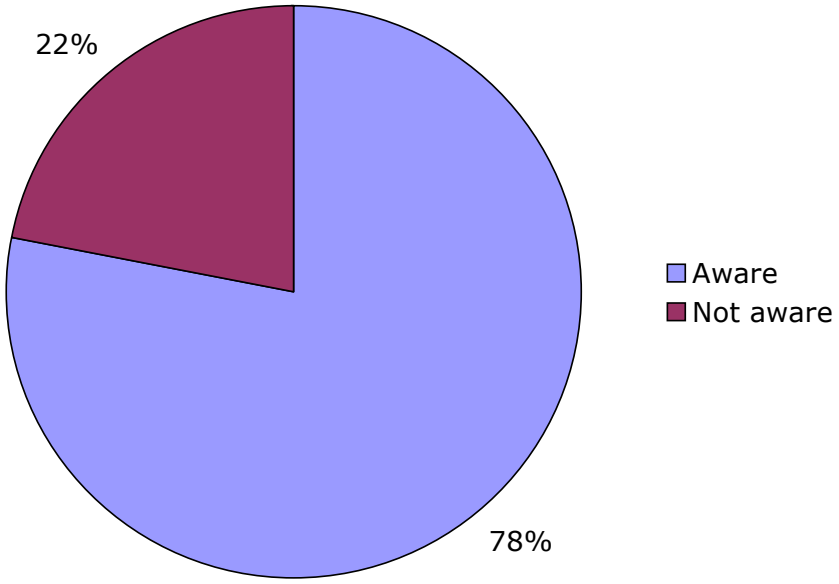
Graph 1 Prior to today, had you heard of invasive exotic species? The answer is yes or no, rather than aware or not aware



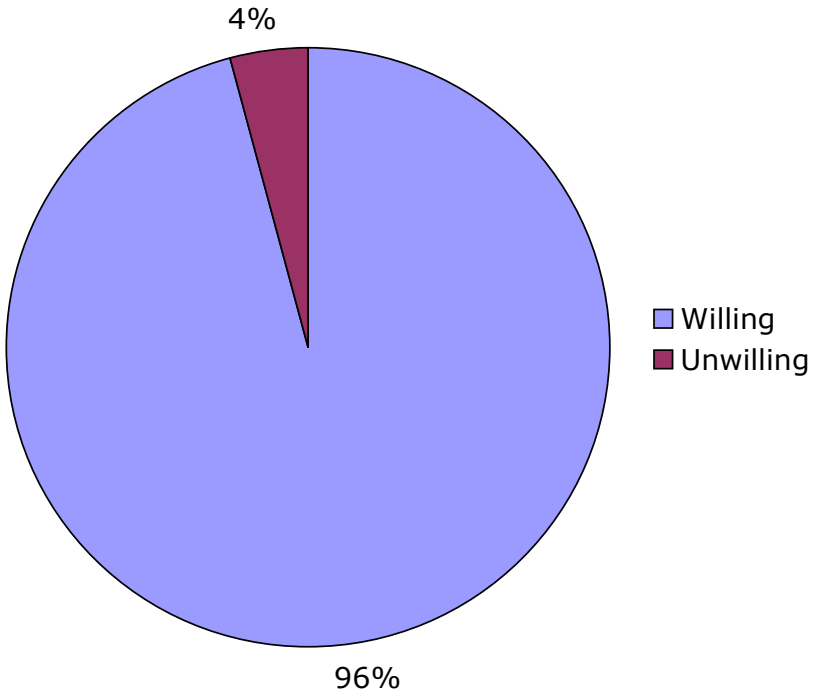
Graph 2 If so, which species?



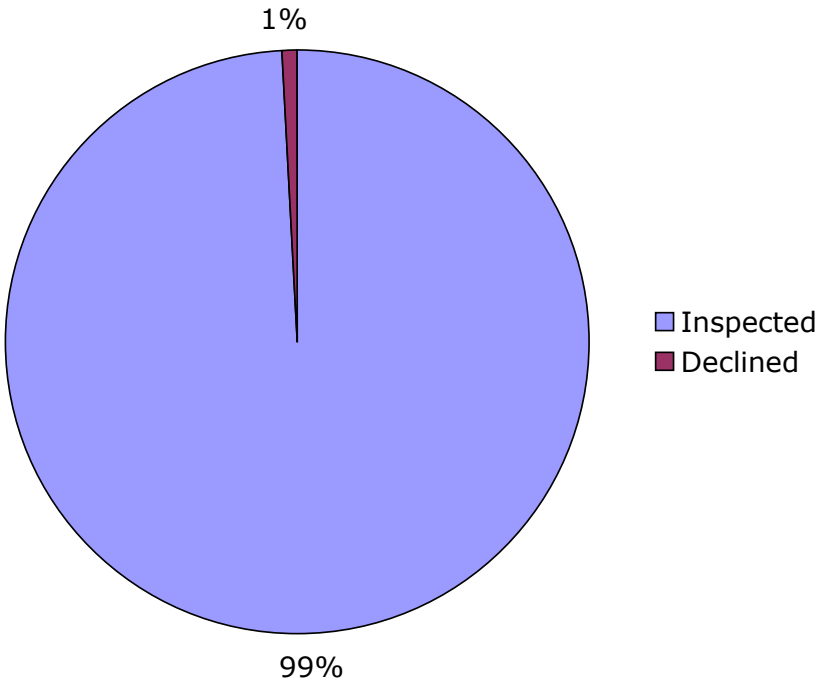
Graph 3 Prior to today, were you aware that one of the main ways that invasive plants enter a lake or pond is by hitching rides on boat motors, trailers and other gear?



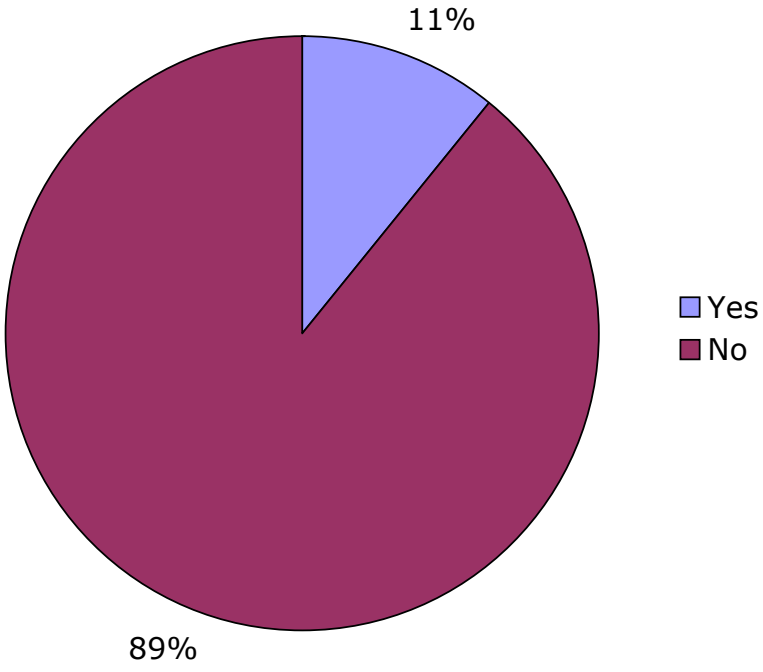
Graph 4 Are you willing to inspect and wash your boat after visiting a lake or pond?



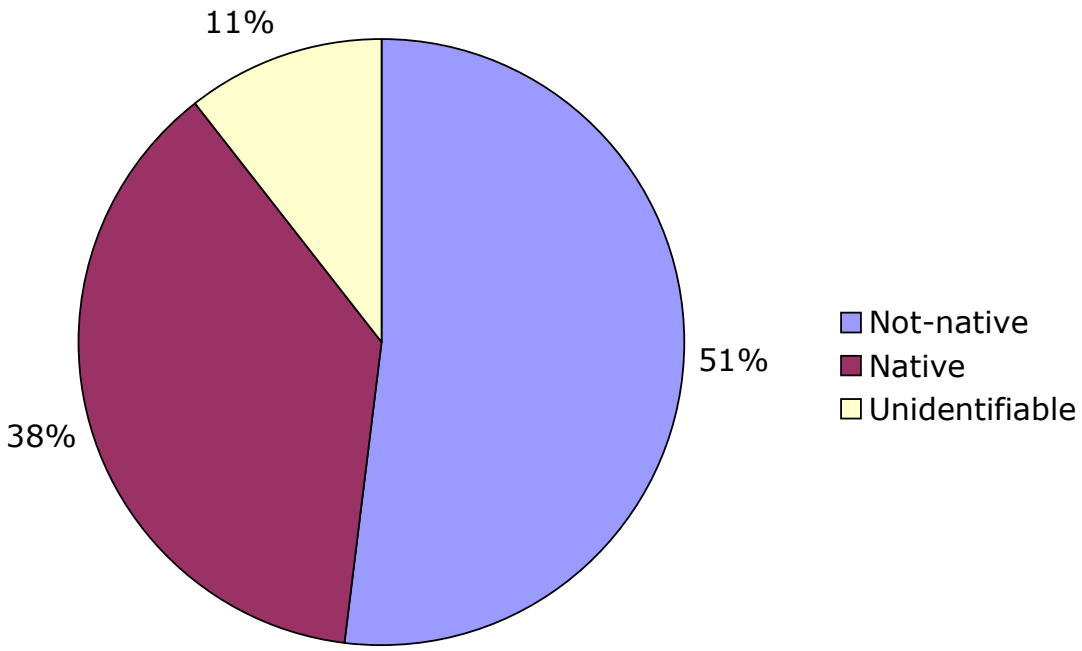
Graph 6 Did you obtain permission to inspect the boat and trailer?



Graph 7 Were any plant fragments present on the boat or trailer?



Graph 8 Were any of the plant fragments non-native?



Discussion

Based on this survey, it appears that the most boaters have an awareness of non-native issues, are generally willing to wash and/or inspect their boat, and are willing to participate in voluntary inspections.

The species they were most familiar with were milfoil and zebra mussels. Many visitors explained that they had learned about these species through fishing clubs or at local nature centers, however, some boaters did not realize that these species are spread by boats, trailers and gear. Other species mentioned by boaters, including Fanwort, Water Chestnut, Hydrilla, Asian Clams, Purple Loosestrife and Snakehead fish. Three were also regional trends noticed. Many survey participants also cited ticks, mosquitoes, moss, algae, termites and rodents as invasive species, and while these species are actually generally native, it is understandable how they could be perceived as invasive. Several boaters were familiar with terrestrial non-native species including Norway maple, Burning Bush, Bittersweet and other (?) terrestrial species, and others cited marine non-natives including certain species of sea squirts and displaced lionfish.

In general, boaters were willing to inspect/wash their boats prior to entering or leaving water body. Only 18 boaters stated that they would not wash/inspect their vessel. The reasons given included: laziness, inconvenience, too rushed, belief that the plants were already dry/dead, felt it was not necessary since their boat has not been in any other water body, and the high cost of gas needed to drive to a car wash. Some boaters were willing to inspect their boats, but were not willing to wash their boats as it was an inconvenience. In some locations, implementation of a “Weed Check” pull-off area where boaters could pull out of the path of launching vessels to safely check their boats, might increase the likelihood of boaters inspecting their boats. One boater even suggested that installing a foot-pump style washing station at the ramp would be helpful.

During 2006, 99.2% of the boaters surveyed were willing to participate in a voluntary inspection. In 159 cases, the boat ramp monitor left the survey blank, or explained that the boat was already in the water. There was 100% compliance at eight of the thirteen ramps, and at four of the ramps only 1or 2 people declined an inspection. However, at Congamond Lake, 13 boaters were unwilling to participate in a voluntary inspection. The reason for the high number of refusals for that particular boat ramp is unclear, but it is interesting to note that Congamond had a high number (second only to Long Pond) of boaters who were unaware of invasive species. Additionally, this is the first year that a ramp monitor has been placed at Congamond Lake, and it is possible the newness of the program coupled with the least overall awareness of invasive species, hindered their willingness to participate. The ramp monitors were asked to speculate why the boaters were unwilling to participate, and indicated that some refusals may have been be due to crowding at the ramp, hurrying to start a fishing tournament or just desiring to get into the water quickly.

Of the 2106 boats that were actually inspected, 224 (11%) were transporting plant fragments. Many of these boats were carry more than one species, and in all, 237 fragments were removed. In 123 instances, the plants were identified as non-native and were removed and disposed of. These were considered “saves” because the removal/disposal of these plants prior to the boat entering or leaving a water body potentially prevented a new introduction or the additional spread of that species. These cost-saving measures potentially spared the Commonwealth thousands of dollars in invasive species management, had any of these 123 plants become established in the water body and had control measures been implemented. Of the remaining plants removed, 25 specimens were too dry to be identified, and 89 fragments were native plant species.

Lastly, ponds that had been visited by boats that were recently in water bodies infested with Zebra Mussels (ex. Twin Lakes, CT and Lake Champlain) will be carefully surveyed for the presence of this species in 2007. Although the microscopic larval stage of Zebra Mussels are not visible to the naked eye, rocks, piers, buoys and other objects will be examined for he presence of adult zebra mussels.